

## **APPENDIX 10: BIOLOGICAL EVALUATION, for Wildlife Resources in the Proposed Plentywater Creek Projects**

USDI - BLM, Salem District, Tillamook Resource Area

Prepared by: Steve Bahe, Wildlife Biologist

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The proposed Plentywater Creek project is a combination of two proposed projects formerly referred to as the Soleburger and Mid-Dairy projects. For the purpose of impact analysis, these proposed actions are being analyzed as two projects; the restoration projects are discussed individually.

- 1.) Primarily the timber sale units which were a part of both the former Soleburger and Mid-Dairy project proposals. The proposed Plentywater Creek project includes both regeneration and commercial thinning harvests in the Matrix land allocation, and density management treatments in the Riparian Reserve land allocation. The project includes associated road construction, reconstruction and decommissioning.
- 2.) Other "Restoration" Projects
  - A.) Fish Habitat Enhancement Projects
  - B.) Wildlife Habitat Enhancement Projects.
  - C.) Flood Plain Restoration (i.e., riparian rehabilitation of an abandoned campground).
  - D.) Road Stabilization Project.

### **Units of Measure:**

Species listed under the ESA - Narrative discussion, including ESA calls, describing the expected impacts as they relate to the potential for disturbance; impacts to suitable habitat; and in the case of the spotted owl, impacts to dispersal habitat.

S&M mollusks - If located, maintenance and enhancement of the species at known sites.

Red tree voles - If located, protection of the physical integrity of the nest site to maintain its population and provide for expansion of the number of active nests at the known sites.

Bureau Manual 6840 Special Status Species Policy Species - Not elevating their status to any higher level of concern including the need to list under the ESA.



## AFFECTED ENVIRONMENT

**Watershed Scale:** Because all of the proposed projects are located within the Dairy-McKay watershed, the following watershed scale discussions apply to all of the five projects contained within this Biological Evaluation.

The Dairy-McKay watershed is strongly dominated by fragmented, early-seral stage habitats which are primarily located on intensively managed industrial forest lands. As a consequence of patches of younger, small conifers and larger aggregated clearcuts being distributed across the landscape, the area is permeated with high contrast edges and contains little interior forest habitat. Many forested riparian corridors have been harvested or reduced to thin strips of red alder.

In general, past and present actions have resulted in little or no habitat within the watershed for those species dependent upon later-seral stage habitat including snags and other coarse woody debris, large blocks of interior forested habitat or cool, shaded, riparian habitats. Conversely, there is a great deal of habitat for those species which depend upon or utilize earlier-seral stage habitats, smaller patches and/or the juxtaposition of differing habitat types. Overall, the in-stream habitat conditions for aquatic species within the watershed are poor. For more detail of the condition of the Dairy-McKay watershed relative to wildlife and wildlife habitat, see the *Dairy-McKay Watershed Analysis* (1999).

**Project Area Scale for the Timber Sale Treatment Units:** The proposed timber sale treatment units which make up the Plentywater Creek Project are forested primarily with trees which are approximately 30- to 70-years-old. Douglas-fir dominates most of the stands proposed for treatment, although some stands contain various levels of hardwoods, primarily red alder, in variously sized patches and single scattered trees. In addition, limited amounts of western redcedar and bigleaf maple, as well as scattered uncommon components of cherry, grand fir and western hemlock are also present in some units.

In general the stands proposed for thinning are strongly dominated by densely stocked Douglas-fir and are fairly homogenous in tree sizes and stand structure. A few of these stands contain scattered or clumped larger trees. Often as a result of lower stocking levels, stands proposed for regeneration harvest are generally more diverse in terms of tree sizes, stand structure, species composition and/or spacing, or are more strongly dominated by hardwood. The following is a brief description of the individual units proposed for treatment under Alternative 2 and the proposed treatment.

**Timber Sale Project Locations:** (Parcels formerly known as Soleburger)

T.2N, R.2W., Sec. 7, 15, 17 & 21

- Timber Sale Units:
- 21-2, approx. 36 acres of regeneration within a 50-year-old poorly stocked Douglas-fir stand.
  - 21-3, approx. 20 acres of regeneration in a mixed conifer/hardwood stand containing trees which vary in age from 50 to 90 years old.
  - 17-1, approx. 20 acres of thinning within a densely stocked 55-year-old Douglas-fir stand.
  - 15-1, approx. 40 acres of regeneration within a 55-year-old relatively understocked mixed conifer stand, and approx. 30 acres of thinning.
  - 7-1, Approximately 50 acres of thinning in a 50-year-old densely stocked Douglas-fir stand which contains a few scattered larger residual Douglas-fir.

**Timber Sale Project Locations:** (Parcels formerly known as Mid-Dairy)

T.2N, R.3W., Sec. 3 & 9, T.3N, R.3W., Sec. 21, 27, 29 & 33

- Timber Sale Units:
- 3-1, approx. 44 acres of regeneration in a 70-year-old mixed conifer-hardwood stand.
  - 3-2, approx. 50 acres of regeneration in a 70-year-old mixed conifer-hardwood stand.
  - 3-3, approx. 30 acres of thinning in a fairly densely stocked 60-year-old predominately Douglas-fir stand.
  - 9-1, approx. 15 acres of regeneration in a poorly stocked 50 to 65-year-old mixed conifer stand which contains a few residual Douglas-firs that are more than 100 years old.
  - 21-1, approx. 25 acres of thinning in a densely stocked 60-year-old predominately Douglas-fir stand; approx. 20 acres of regeneration within a 55-year-old mixed conifer/hardwood stand; and approx. 20 acres of regeneration within an approximately 55-year-old mixed conifer/hardwood stand much of which is almost pure hardwood.
  - 27-1, approx. 5 acres of regeneration harvest within a root rot pocket containing poor conifer stocking; and approx. 110 acres of thinning within a densely stocked 60-year-old Douglas-fir stand.
  - 29-1, approx. 38 acres of thinning within a densely stocked 30-year-old stand of Douglas-fir.
  - 33-1, approx. 11 acres of regeneration harvest in a densely stocked predominately Douglas-fir stand which is about 60 years old.

Coarse Woody Debris (CWD), including both snags and downed logs, is generally lacking within the treatment areas although some portions of the stands, especially root rot pockets, contain an appreciable CWD component. The CWD within these pockets is generally comprised of smaller logs of a decay class 1 or 2, and snags which are not expected to persist over time due to weakened root systems. In addition, larger decay class 4, “legacy logs” are scattered throughout some portions of the proposed units. Stand exams conducted within the treatment area indicate that there are no snags within large portions of the treatment areas although a small number of scattered, small snags were noted on a field exam of the area.

The proposed project would occur on lands allocated as Matrix and Riparian Reserve as identified in the NWFP (Northwest Forest Plan or *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, and *Standard and Guidelines for Management of Habitat for Late-Successional and Old-growth Forest Related Species Within the Range of the Northern Spotted Owl* - April 1994) and as GFMA/Matrix and Riparian Reserve as identified in the RMP (*Salem District Record of Decision and Resource Management Plan* - May 1995). Of the three action alternatives, alternative 2 proposes to treat the most acres, approximately 496 acres within the Matrix land allocation and approximately 37 acres within the Riparian Reserves.

There are no unmapped LSRs within the vicinity of the proposed action. The project area is not within designated spotted owl or marbled murrelet critical habitat nor a spotted owl RPA (Reserve Pair Area). There are no known special habitats (e.g., talus slopes, cliffs, caves, or mines or abandoned wooden bridges) within the vicinity of the proposed project.

Table 1. lists those Bureau Special Status Species, S&M and federally listed wildlife species which are potentially located within or near the Plentywater Creek projects.

Table 1.

Wildlife species of the Tillamook Resource Area  
that have such status that their evaluation is warranted under NEPA.

**Project: PLENTYWATER CREEK PROJECT**

Common Name	ESA	NWFP	BLM	Impact Synopsis
<b>Mammals:</b>				
Columbian White-tailed Deer	FE	-	FE	No - Not within expected range
Fisher	-	-	BS	No - Presence is very unlikely; negligible impact to habitat.
Fringed Myotis	-	ROD	BT	No - Negligible impact to habitat, see BE text
Long-eared Myotis	-	ROD	BT	No - Negligible impact to habitat, see BE text
Long-legged Myotis	-	ROD	BT	No - Negligible impact to habitat, see BE text
Red Tree Vole	-	S&M	-	Yes - Felling of Douglas-fir trees
Silver-haired Bat	-	ROD	BT	No - Negligible impact to habitat, see BE text
Townsend's Big-eared Bat	-	-	BS	No - Negligible impact to habitat, see BE text
<b>Birds:</b>				
Aleutian Canada Goose	FT	-	FT	No - No habitat
Bald Eagle	FT	-	FT	Yes - Habitat modification and potential for disturbance
Brown Pelican	FE	-	FE	No - No habitat
Harlequin Duck	-	-	BA	No - Not within current range
Lewis' Woodpecker	-	-	BS	No - Not within current range
Marbled Murrelet	FT	-	FT	Yes - Habitat modification and potential for disturbance
Northern Spotted Owl	FT	-	FT	Yes - Habitat modification and potential for disturbance
Northern Goshawk	-	-	BS	No- Negligible impact to habitat, see BE text
Peregrine Falcon	-	-	BS	No - No impact to habitat, see BE text
Purple Martin	-	-	BS	No - Presence very unlikely
Yellow-breasted Chat (WV)	-	-	BS	No - Not in range
<b>Amphibians and Reptiles:</b>				
Columbia Torrent Salamander	-	-	BS	Yes - Possible impact to habitat.
Cope's Giant Salamander	-	-	BA	Yes - Possible impact to habitat. On the edge of the species range.
Oregon Spotted Frog	FC	-	FC	No - Not in current range
Painted Turtle	-	-	BS	No - Not in range
Red-legged frog	-	-	BT	Yes - Possible impact to habitat, species identified in area
Spotted Frog	-	-	BS	No - Not in current range
Western Pond Turtle	-	-	BS	Yes - Potential habitat

Table 1. (cont.)

Wildlife species of the Tillamook Resource Area  
that have such status that their evaluation is warranted under NEPA.

**Project: PLENTYWATER CREEK PROJECTS**

Common Name	ESA	NWFP	BLM	Impact Synopsis
<b>Invertebrates: (arthropods and worms)</b>				
American Acetropis Grass Bug	-	-	BS	No - No habitat
Insular Blue Butterfly	-	-	BS	No - No habitat
Oregon Giant Earthworm	-	-	BS	No - Not in range
Oregon Silverspot Butterfly	FT	-	FT	No - No habitat
Valley Silverspot Butterfly	-	-	BA	No - No habitat
Willamette Callippe Fritillary Butterfly	-	-	BS	No - No habitat
<b>Invertebrates: (mollusks)</b>				
Blue-grey Tail-dropper	-	0	-	Yes - Potential habitat
Evening Fieldslug	-	S&M	-	Yes - Potential habitat
Keeled Jumping-slug	-	S&M	-	Yes - Potential habitat
Oregon Megomphix	-	S&M	-	Yes - Potential habitat, species identified during surveys
Papillose Tail-dropper	-	0	-	Yes - Potential habitat, species identified during surveys
Puget Oregonian	-	S&M	-	Yes - Potential habitat
Warty Jumping-slug	-	S&M	-	Yes - Potential habitat

**ESA** - Endangered Species Act; **FE** - Federal Endangered; **FT** - Federal Threatened; **FC** - Federal Candidate

**NWFP** - Northwest Forest Plan; **S&M** - Survey and Manage species; **ROD** - Bat species whose roost sites are protected in the ROD; **0** - Former Survey & Manage species which were included in surveys but have since been removed from the S&M list.

**BLM** - BLM Manual 6840 Special Status Species Policy list; **BS** - Bureau Sensitive; **BA** - Bureau Assessment; **BT** - Bureau Tracking

**Impact Synopsis:** **NO**- No appreciable impacts to the species or its habitat. Unless otherwise noted, no further analysis will be conducted in the EA. **YES** - Impacts to a species or its habitat may occur and further analysis will be conducted in the BE (Biological Evaluation).

### **Wildlife Species listed or proposed under the Endangered Species Act:**

Based on the fact that no suitable habitat nor critical habitat for the Oregon silverspot butterfly, Fender's blue butterfly, Aleutian Canada goose, western snowy plover, brown pelican or Columbia white-tailed deer is present within the project areas and there are no expected effects upon these species, which are either proposed or listed under the Endangered Species Act, they will receive no further discussion or analysis.

Table 2 displays a summary of the individual timber sale units within the Plentywater Creek Project relative to their proximity to suitable habitat for the spotted owl, marbled murrelet and bald eagle. Table 3 displays the relative amounts of T&E species habitats potentially impacted by the various alternatives of the Plentywater Creek timber sale projects.

#### **Northern Spotted Owl - Federally Threatened (FT)**

The proposed action would not occur within or near designated spotted owl critical habitat. There are no known occupied sites or 100-acre core areas as identified within the NWFP, within the vicinity of the project area. It is not known if the spotted owl is currently using any of the project areas because of the lack of current survey data, however aside from perhaps an occasional dispersing individual, it would not be expected based on the general lack of suitable habitat within the area.

There are two historic spotted owl sites approximately 0.5 to 1.5 miles from the project area. These sites (Denny/Whiskey and Big Canyon) were last known to be occupied in 1978. There has been no survey effort in the vicinity of these sites since the early-to-mid 1990's, but occupancy of these sites is considered to be very unlikely given the current habitat condition of the area resulting from logging activities within the area over the last few decades.

The majority of forest land in that portion of the state which includes the project area is privately owned and is managed for timber production in such a way as to preclude the development and/or maintenance of suitable spotted owl habitat. Of the forest lands within the Dairy Creek 5th Field watershed which include all ownerships, roughly 7% is considered suitable habitat for the spotted owl (based on stands with an age of 80-years-old or older) while a total of approximately 54% (including the 7% suitable) is of an age and condition to function as dispersal habitat.

The federal lands in the watershed are distributed in a scattered, checkerboard fashion and do not lend themselves to the management of larger blocks of suitable habitat for a wide-ranging species such as the spotted owl. Federal lands within the Matrix land allocation are generally intended to be managed with a high emphasis on timber production with rotation lengths that would also preclude the development and/or maintenance of suitable owl habitat. Approximately 82% of the BLM land within the watershed is in a condition to function as dispersal habitat, while 12% or 740 acres are considered to be suitable owl habitat. This is based upon a GIS sort of the timber database identifying forest stands which contain at least a 1 bar stocking component which is greater than or equal to 80-years-old.



In addition to the 740 acres of suitable spotted owl habitat identified above and based upon a site-specific evaluation, units 9-1, 21-3, and 7-1 have been determined to be suitable habitat for the spotted owl, although the habitat is of a marginal quality. While these stands, totaling up to approximately 80 acres, may be less than 80-years-old, they are generally in proximity to and/or exhibit habitat features such as scattered individuals or small groups of larger trees, and/or a multistoried structure which are believed to make the stands, or at least portions of the stands, suitable as foraging and roosting habitat for the spotted owl. (The 5 acres of unit 27-1 which has also been determined to be suitable habitat are included in the 740 acres of the GIS total mentioned above based on the timber-typing which reflects a 100-year-old Douglas-fir component.) The fragmented nature of the surrounding landscape and marginal habitat quality of the affected stands is believed to limit their current value as nesting habitat. Of the approximately 85 acres of suitable habitat potentially impacted by the Plentywater Creek Project (alternatives 2 and 3) approximately 56 acres are proposed for thinning and 30 acres are proposed for regeneration harvest.

All of the other treatment areas, totaling up to approximately 448 acres in Alternative 2, are considered to be spotted owl dispersal habitat. Primarily as a function of the stands' ages and lack of vital habitat characteristic including large trees and structural diversity, they are not considered to be suitable foraging, roosting, or nesting habitat. Of the approximately 448 acres of dispersal habitat potentially impacted by Plentywater Creek Project (alternative 2), approximately 232 acres are proposed for thinning and 216 acres are proposed for regeneration harvest.

Up to approximately 37 acres of the proposed thinning would occur within Riparian Reserves, with all other treatments on up to approximately 496 acres within the Matrix/GFMA land allocation (alternative 2).

### **Marbled Murrelet - (FT)**

The project areas are not located within or near marbled murrelet designated critical habitat.

Ranging from approximately 41 to 49 miles from the ocean, the project areas are located within Marbled Murrelet Zone 2 (NWFP C-10). In Oregon, Zone 1 is located in a band up to 35 miles inland and Zone 2 is located further than 35 miles from the sea; Zone 1 holds a higher likelihood for murrelet occupancy than Zone 2. With the nearest known murrelet site being more than 20 miles to the northwest, there are no known occupied murrelet sites within the vicinity of the proposed project areas.

Three proposed treatment units (7-1, 9-1 and 27-1) contain, or are in proximity to, individual trees and/or small groups of trees which are potentially suitable as murrelet nest trees based upon the presence of suitable nesting platforms. A small group of older Douglas-firs within unit 7-1 which contain a few potentially suitable nesting platforms was surveyed for murrelets during the 2000 and 2001 survey seasons as per the Pacific Seabird Group Marbled Murrelet Technical Committee protocol; there were no detections. Within or near unit 9-1, up to approximately 12 trees containing potentially suitable murrelet nesting platforms have been identified, and within unit 27-1 up to approximately six potentially suitable trees have been identified. The potentially suitable nest

trees associated with units 9-1 and 27-1 were surveyed to protocol during the 2001 survey season; there were no detections. Surveys are scheduled to be completed in these potential treatment units during the 2002 survey season. These trees within or directly adjacent to units 9-1 and 27-1 which have been determined to be potentially suitable for murrelet nesting will be surveyed to protocol prior to project implementation. As per the NWFP (pg. C-10) and RMP (pg. 32), if surveys determine these stands of suitable habitat to be occupied by murrelets, all contiguous existing and recruitment habitat within a 0.5 mile radius would be protected.

There is no additional potential marbled murrelet habitat identified within or near (within 0.25 miles) any of the other proposed action areas. It is possible that a limited number of unidentified scattered individual trees or small groups of trees containing potential nesting platforms are located along some portions of the various haul routes.

### **Bald Eagle - (FT)**

Dispersed eagle usage, primarily roosting or resting, may occur throughout the project area where suitable habitat is present. This occasional, dispersed eagle usage would most probably occur during the winter months. Recent sightings (March 2001) of one and two eagles have been reported just south of the BLM "Big Canyon" LSR parcel which is approximately one mile west of unit 9-1. It has been determined that these sightings are eagles which are roosting and/or foraging along East Fork Dairy Creek. The nearest known bald eagle nest and communal winter roost is approximately 3.5 miles from portions of the proposed action.

For the purposes of this assessment, suitable habitat for bald eagles is generally defined as conifer habitat of at least 80 years of age, or younger stands containing scattered groups or individual residual old-growth or larger second-growth trees, which is located within approximately 1.0 mile of a major river or approximately 0.5 mile of a major tributary. Applying the definition above and considering factors such as impediments to fish passage and fish distribution as identified in the Dairy-McKay Watershed Analysis, as well as professional opinion, two of the proposed treatment units (units 9-1, 7-1) totaling approximately 65 acres, have been determined to contain suitable habitat for bald eagles. This habitat is probably best suited for roosting and resting rather than nesting based upon the general lack of suitable nest trees and the fact that the coho salmon and steelhead trout runs within the area are generally quite depressed.

Three units (7-1, 9-1, and 29-1) are within 0.25 miles (or within a 0.5 mile line-of-sight distance) of additional suitable eagle habitat, none of this suitable habitat is known to be used by eagles. There is no additional identified eagle habitat within or near any of the other proposed action areas, although it is possible that a limited number of unidentified scattered individual trees or small groups of trees which are suitable for roosting or resting may be located near some of the treatment units or along portions of the various haul routes.

## **Survey and Manage Wildlife Species (S&M) :**

### **Red Tree Vole**

The NWFP and RMP identify one vertebrate Survey and Manage species that may occur in the area of the Plentywater Creek Project. This species is the red tree vole, a category 2 species (survey prior to activities and manage known sites). Although the red tree vole is more often associated with larger and older Douglas-fir trees than those commonly found in the vicinity of the proposed action, the project area currently contains potential habitat for the red tree vole.

All of the proposed timber sale units and those restoration project areas containing suitable habitat potentially impacted by the project proposal have been surveyed to protocol for red tree voles. *Survey Protocol for the Red Tree Vole* (Version 2.0) was followed for all surveys. These surveys resulted in no red tree voles or red tree vole nests being located (Project Record 121).

### **Mollusks**

There are several Survey and Manage invertebrate species (mollusks) as identified within the NWFP and RMP with the potential of being located within the proposed treatment units and/or in the general sale area (see table 1). In general, these species are associated with the organic duff layer on the forest floor as well as with habitat types containing CWD, sword ferns and a hardwood component, especially big-leafed maple.

Survey and Manage mollusk surveys for Plentywater Creek Project were conducted in and near all proposed timber sale units in the spring and fall of 2000. *Survey Protocol for Terrestrial Mollusk Species from the Northwest Forest Plan* (Draft Version 2.0, Oct. 29, 1997) was followed for all surveys.

After the majority of the Survey and Manage mollusk surveys were complete, the *Final Supplemental Environmental Impact Statement for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (USDA and USDI, November 2000) determined that new information indicated that 72 species, in all or part of their range, were secure or otherwise did not meet the basic criteria for Survey and Manage. The *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (USDA and USDI, January 2001) removed these species from the S&M list in all or part of their range. Two of these species, the blue-grey tail-dropper and the papillose tail-dropper had been surveyed for in the Plentywater project area with approximately 14 papillose tail-dropper “known sites” being located in or near the proposed treatment units. As per the *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (USDA and USDI, January 2001) guidelines to manage these sites are not required.

In addition to the papillose tail-dropper sites, surveys resulted in approximately 12 Oregon Megomphix (*Megomphix hemphilli*) known sites being located. Oregon Megomphix are Survey and Manage category 1A species - (survey prior to activities and manage all known sites).

Oregon Megomphix are strongly associated with hardwood trees, particularly bigleaf maple, within conifer forests. Additional habitat features include, uncompacted, cool, moist soils; hardwood leaf litter; abundant later decay class large and small woody debris. Megomphix' favorable habitat features also include sword ferns and hazel.

As a result of these discoveries and to manage these known *Megomphix* sites in a manner as to provide protection of the physical integrity of the site to maintain its population and to provide for expansion of the number of active nests at the site, "Habitat Areas" would be established as per *Management Recommendations for Terrestrial Mollusk Species, Megomphix hemphilli, the Oregon Megomphix* v.2.0, November 1999. As per the criteria contained within the Management Recommendations, the Oregon Megomphix has not been determined to be "locally common."

The Habitat Areas would be configured in such a way as to provide protection to the sites and maintain the sites' current micro-climate. Maintenance of the current canopy closure within the Habitat Area, would help provide protection to the site's current conditions through maintaining a well-shaded forest floor in and adjacent to the known site and assuring a continued supply of leaf litter and CWD to the forest floor. If post-harvest, broadcast burning takes place, the integrity of Habitat Areas would be maintained by using appropriate fire protection measures. The following general descriptions of the expected configurations of the Habitat Areas based upon the type of treatments proposed are provided for the purposes of impact analysis:

#### Density Management or Commercial Thinning Areas:

- ! In areas where the post harvest canopy closure within 200 feet of the site center is expected to be 60% or greater, maintain a no-cut, no-entry buffer with a radius of at least 50 feet. No patch cuts would occur within a 200-foot radius from the site center.
- ! In areas where the post harvest canopy closure within 200 feet of the site center is expected to be less than 60%, maintain a no-cut, no-entry buffer of at least a 100-foot radius. No patch cuts would occur within a 200-foot radius from the site center.
- ! Reserve all hardwoods within a 200-foot radius from the site center.

#### Regeneration Harvest Areas:

- ! Place an approximately 200-foot radius no-cut, no-entry buffer around each mollusk site. The actual size and shape of the buffer would be determined by existing site specific factors, such as location of desirable habitat features, slope, aspect, topographic features, etc.. A wildlife biologist would determine the location and size of the buffers, or instruct others in the placement of buffers.

## **Other Special Status Species:**

### **Amphibians and Reptiles:**

#### **Red-legged Frog - (BT) Bureau Tracking**

Suitable red-legged frog habitat is located within and near the proposed project area. Some riparian areas adjacent to the proposed project area that contain permanent water and could function as red-legged frog breeding areas and the well-shaded uplands provide good habitat for non-breeding and dispersing frogs.

Red-legged frogs have been observed in or near some of the proposed treatment units.

#### **Columbia Torrent Salamander - (BS) Bureau Sensitive**

The Columbia torrent salamander is directly associated with the splash zone of permanently flowing streams and seeps. Suitable habitat is located within the Riparian Reserves located within and adjacent to the proposed units.

#### **Cope's Giant Salamander - (BA) Bureau Assessment**

Cope's Giant Salamander is one of the most recently described vertebrates in the Pacific Northwest. This salamander is most commonly known in the aquatic larval and neotenic forms; terrestrial adults are extremely rare. These salamanders most commonly inhabit fast flowing creeks and streams and may also be found in seeps. Cope's Giant Salamanders are nocturnal and emerge from their diurnal hiding places and crawl about the rocky stream bottom or in the moist splash zone along the banks of streams.

Although this species has not been observed within the vicinity of the proposed action, streams within or near the project area afford suitable habitat.

#### **Western Pond Turtle - (BS)**

In Oregon this species is found primarily in rivers, large-order streams and wetland habitats. In the Willamette, a significant percentage of the records are from wetland/pond areas (often oxbows) adjacent to the river, while most others are riverine or wetland sites. Relatively few records are from streams (Holland, 1994). A few of the proposed Plentywater Creek units, especially the southernmost units, may be just within the reported range for the species. In general, with the preferred habitat for the western pond turtle being associated with more open wetlands or aquatic habitats in larger stream systems than those present in the vicinity of the Plentywater Creek project, it is possible although very unlikely that the species is currently present in the project area.

### **Birds:**

#### **Peregrine Falcon - (BS)**

The peregrine falcon was officially delisted from the ESA species list, effective 8/25/99; It is now treated as "Bureau Sensitive" under the Bureau's Special Status Species Policy. There have been

no peregrine falcon sightings recorded in the area of the proposed action; the habitat within and around the proposed action is not suitable for falcon nesting. It will receive no further analysis in conjunction with the Plentywater Creek project.

### **Northern Goshawk - (BS)**

Goshawks are generally associated with older conifer stand types with closed canopies, but have also been seen in younger seral and mixed stands. Goshawks are extremely rare in the Coast Range, and though thought to be possible, they have not been documented as breeding in the Northern Oregon Coast Range. Although goshawks have not been observed in the vicinity of the project area, migrating and dispersing birds could periodically be using the area.

### **Mammals:**

#### **NWFP Bats**

In addition to the red tree vole which is a Survey & Manage Species, the NWFP identifies five species of bats which would benefit from additional habitat protection. Four of these five species have potential of being located within or near the proposed action areas. These species include the fringed myotis, long-eared myotis, long-legged myotis, and the silver-haired bat. All of these bat species are known to inhabit immature coniferous forest and may forage near riparian areas, open areas, and along forest edges while utilizing large hollow trees for roosting, hibernating, and maternity colonies.

There are no known bat roosting or hibernaculum sites within the project area. Surveys for these species are required under the NWFP if caves, mines, or abandoned wooded bridges and buildings are within or near the project area. There are no known caves, mines, or abandoned wooded bridges within or near the project area, and all of the known buildings near the area are located on private land where the BLM has no authority; no bat surveys will be conducted within or near the Plentywater Creek project area.

#### **Townsend's Big-eared Bat - (BS)**

In addition to the bat species identified within the NWFP, one species of bat, Townsend's big-eared bat, is covered by the Bureau's Special Status Species Policy. Townsend's big-eared bats are seldom abundant but are known to occupy a variety of habitats. In western Oregon, these bats are associated with coniferous forests, but they are also considered characteristic dwellers of caves, abandoned mines, and buildings. No caves or abandoned mines are known to be located within the vicinity of the proposed action although a number of the proposed units are in the vicinity of private residences which may have buildings used by the species. Some of the more open forested and riparian habitats within and near the proposed treatment units could function as foraging habitat and it is possible although rather unlikely that this species of bat could be encountered within or near the proposed project area.

## **Other Species of Concern**

### **Roosevelt Elk and Black-tailed deer**

Roosevelt elk and black-tailed deer use a wide range of habitat types and use of the proposed sale area by these species is considered moderate. The quality of the habitat for these species in the sale area is considered to be good. This is based on the fact that areas affording hiding cover are adjacent to, and interspersed with, areas seeded for forage and/or containing adequate browse. The presence of residences and associated disturbance as well as relatively high density of open roads within some portions of the project area, limits the habitat quality of the area especially for Roosevelt elk.

## **ENVIRONMENTAL CONSEQUENCES resulting from the alternatives of the Plentywater Creek Timber Sale Projects**

### **ALTERNATIVE 1 - (The “No Action” Alternative)**

Under this alternative no forest management activities would occur within the proposed project areas at this time and the forest stands would continue to grow and develop without management intervention. Under the “No Action” Alternative, the identified impacts of the action alternatives would not occur at this site at this time. Another project area would be selected to replace the proposed project and the associated PSQ volume, potentially resulting in impacts of a similar nature at a different location.

Under the “No Action” alternative, no density management treatment of up to 37 acres of Riparian Reserve as proposed under the action alternatives would occur. The expected benefits to attaining the ASC objectives and promoting the development of some features of late-seral stage habitat resulting from the treatments would be expected to occur in a slower time frame as the untreated stands continue to develop naturally.

Selection of the “No Action” Alternative would be of *NO EFFECT* upon the marbled murrelet, spotted owl, bald eagle and all other species listed under the ESA. No impacts to S&M wildlife species or any known sites would occur. In addition, the population viability of no Special Status Species or species of concern would be expected to be adversely impacted resulting in the elevation of their status to any higher level of concern including the need to list under the ESA.

**Table 2. Plentywater Creek Timber sale Projects - Potential for impacts to wildlife species listed under the ESA resulting from disturbance and/or habitat modification as a result of the various alternatives**

unit	Unsurveyed suitable habitat* within 0.25 miles**			Suitable habitat within unit*			Alt. 2	Alt. 3	Alt. 4	season of potential operation if within .25 miles of T&E species suitable habitat**			
	B E	NSO	MM	B E	NSO	MM				10/1 to 2/29	3/ 1 to 7/ 6	7/ 7 to 8/ 5	8/6 to 9/30
3-1	N	N	N	N	N	N	Y	Y	Y				
3-2	N	N	N	N	N	N	Y	Y	Y				
3-3	N	N	N	N	N	N	Y	N	Y or N				
27-1	N	Y	N	N	Y, about 5 acres	Y, will be surveyed	Y	Y	Y	X	X	X	X
21-1	N	N	N	N	N	N	Y	Y	Y				
29-1	Y	Y	Y	N	N	N	Y	Y	Y	X	X	X	X
9-1	Y	Y	Y, will be surveyed	Y	Y	Y, will be surveyed	Y	Y	Y	X	X	X	X
33-1	N	N	N	N	N	N	Y	N	Y or N				
7-1	Y	Y	N	Y	Y	Y, surveys complete	Y	Y	Y	X	X	X	X
17-1	N	N	N	N	N	N	Y	N	N				
21-2	N	N	N	N	N	N	Y	Y	N				
21-3	N	Y	N	N	Y	N	Y	Y	N	X	X	X	X
15-1	N	N	N	N	N	N	Y	Y	N				

\* BE = Bald Eagle, NSO = Northern Spotted Owl, MM = Marbled Murrelet

\*\* In the case of the Bald Eagle this also includes suitable habitat within a 0.5 mile line-of-sight distance



## ALTERNATIVE 2

### **Species listed or proposed under the Endangered Species Act:**

In accordance with regulations pursuant to Section 7 of the Endangered Species Act of 1973, as amended, formal consultation with the USFWS concerning the potential impacts of the Plentywater Creek project upon the spotted owl, marbled murrelet and bald eagle will be completed. This will most likely involve the preparation of project-specific Biological Assessment rather than completing consultation under the annual programmatic habitat modification consultation process.

Table 3 displays the relative amounts of T&E species habitats potentially impacted by the various alternatives of the Plentywater Creek Timber sale Projects.

#### **Northern Spotted Owl - (FT)**

The project area is not located in or near spotted owl designated critical habitat therefore, the proposed project would be of “*NO EFFECT*” upon spotted owl designated critical habitat.

Although there are no known occupied sites within the vicinity of the proposed action, the proposed action could result in generation of noise above the ambient level with 0.25 miles of unsurveyed suitable habitat during the critical and non-critical breeding periods.

Of the forest lands within the Dairy Creek 5th Field watershed which include all ownerships, roughly 7% is considered suitable habitat for the spotted owl (based only on a stand age of 80-years-old or older) while a total of approximately 54% (including the 7% suitable) is of an age and condition to function as dispersal habitat. Approximately 82% of the BLM land within the watershed is in a condition to function as dispersal habitat, while 12% or 740 acres are considered to be suitable owl habitat based upon the fact that the forested stands contain a component (at least 1 bar stocking level) which is greater than or equal to 80-years-old.

With units 9-1, 21-3, 7-1, and approximately 5 acres of unit 27-1 having been determined to be suitable habitat for the spotted owl, alternative 2 would impact approximately 85 acres of unsurveyed, suitable spotted owl habitat. This suitable habitat is of a marginal quality. A total of approximately 56 acres of suitable habitat within units 7-1 and 27-1 are proposed for thinning under Alternative 2 and would be degraded as a result of the thinning operation. It is believed that these acres would continue to function as suitable habitat post-harvest based on the facts that the post-harvest canopy closure is expected to be approximately 60% and in general, the reserve trees would be selected from among the largest within the stand. The proposed thinning is expected to result in increased or maintained growth rates of the understory shrub species and the trees retained within the overstory. This is especially beneficial given the fact that many of these acres are relatively densely stocked and less than 80 years old; they were determined to be suitable owl habitat based upon the presence of a few scattered larger trees, most of which would be retained,

rather than a large average DBH for the whole stand. Thinning would increase the average DBH of the treated stand. These benefits associated with the thinning within suitable owl habitat would be expected to be longer-lived/greater within the 5 acres of thinning proposed within the Riparian Reserve land allocation based upon the likelihood of the future regeneration treatments to occur within the treatment areas within the Matrix land allocation. Approximately 30 acres of suitable habitat within units 9-1 and 21-3 are proposed for regeneration harvest; these acres would be removed from a condition to function as suitable owl habitat for up to approximately 80 years as a result of alternative 2.

Of the approximate 448 acres of dispersal habitat potentially impacted by Alternative 2, approximately 232 acres are proposed for thinning and 216 acres are proposed for regeneration harvest. While there are some expected short-term adverse impacts to the dispersal habitat proposed for thinning, these acres are expected to continue to function as dispersal habitat post-harvest. This is based upon the fact that the average post-harvest canopy closure is expected to be greater than 40%; it is expected to be approximately 60%. While small openings, patch-cuts, roads clearings and landings may result in isolated portions of the thinning treatment areas having a post-treatment canopy closure of less than 40%, the portions of the project area being proposed for thinning as a whole are not expected to be removed from a condition to function as spotted owl dispersal habitat. The proposed thinning is expected to result in increased or maintained growth rates of the understory shrub species and the trees retained within the overstory. This would result in the development of some features of spotted owl suitable habitat earlier than would occur without treatment. These features include large trees within the overstory which would be potential sources of future snags and logs. The long-term benefits associated with the thinning within dispersal habitat would be expected to be longer-lived/greater within the 32 acres of thinning proposed within the Riparian Reserve land allocation based upon the likelihood of the future regeneration treatments to occur within the Matrix land allocation. These benefits take on added meaning recognizing the general lack of late-seral habitat within the watershed, and the expectation that vast majority of the lands within the watershed will be managed in such a way as to preclude the development of habitat for late-seral stage species. The 216 acres of dispersal habitat which are proposed for regeneration harvest would be removed from a condition to function as dispersal habitat for about 40 years.

With approximately 54% of the forest lands (all ownership) and approximately 82% of the BLM land within the watershed being in a condition to function as dispersal habitat, it has been determined that adequate dispersal habitat would be present post harvest to facilitate owl dispersal.

Alternative 2 *MAY AFFECT* and is *LIKELY TO ADVERSELY AFFECT* the spotted owl based upon the fact that it would result in an increased potential for disturbance of unsurveyed suitable habitat during the critical and non-critical breeding periods; approximately 448 acres of dispersal habitat would be impacted (approximately 232 acres would be degraded through commercial thinning or density management and approximately 216 acres would be removed through regeneration harvest); and 85 acres of marginally suitable, unsurveyed habitat would be impacted (approximately 56 acres would be degraded through commercial thinning or density management

and approximately 30 acres would be removed through the proposed regeneration harvest).

**Marbled Murrelet - (FT)**

The project area is not located in or near murrelet designated critical habitat therefore Alternative 2 would have *NO EFFECT* upon marbled murrelet designated critical habitat.

Three proposed treatment units (7-1, 9-1 and 27-1) contain or are in proximity to individual trees and/or small groups of trees which are potentially suitable as murrelet nest trees based upon the presence of suitable nesting platforms. All of these trees which are potentially suitable as murrelet nest trees will be surveyed to protocol prior to project implementation. As per the NWFP (pg. C-10) and RMP (pg. 32), if surveys determine these stands of suitable habitat to be occupied by murrelets, all contiguous existing and recruitment habitat within a 0.5 mile radius would be protected.

There is no additional identified potential marbled murrelet habitat within or near (within 0.25 miles) any of the other proposed action areas, although it is possible that a limited number of unidentified scattered individual or small groups of trees containing potential nesting platforms are located along portions of the various haul routes.

Alternative 2 *MAY AFFECT* and is *LIKELY TO ADVERSELY AFFECT* the marbled murrelet based upon the fact that there would be an increased potential for disturbance of unsurveyed suitable habitat during the critical and non-critical breeding periods; and there would be potential to degrade or remove the suitable habitat located within or near three treatment units (one 13-acre regeneration unit and two commercial thinning and density management units totaling approximately 110 acres).

**Bald Eagle - (FT)**

Dispersed eagle usage, primarily roosting or resting, may occur throughout the project area where suitable habitat is present. This occasional, dispersed eagle usage would most probably occur during the winter months. Recent sightings (March 2001) of one and two eagles have been reported just south of the BLM "Big Canyon" LSR parcel which is approximately one mile west of unit 9-1. It has been determined that these sightings are eagles which are roosting and/or foraging along East Fork Dairy Creek. The nearest known bald eagle nest and communal winter roost is approximately 3.5 miles from the proposed action.

Two of the proposed treatment units totaling approximately 65 acres (units 9-1, 7-1) have been determined to contain suitable habitat for bald eagles. This habitat is probably best suited for roosting and resting rather than nesting based upon the general lack of suitable nest trees and the fact that the coho salmon and steelhead trout runs within the area are generally quite depressed. One additional unit (29-1) may be within 0.25 miles, or within a 0.5 mile line-of-sight distance, of a suitable eagle habitat; none of this suitable habitat is known to be used by eagles.

Unit 9-1, which totals approximately 13 acres, contains suitable bald eagle roosting and resting

habitat in the form of scattered residual old-growth or large second growth trees. It is proposed for regeneration harvest. At the time of harvest, approximately 14 trees per acre would be reserved for use by wildlife, snag recruitment and CWD requirements. Many of these trees would be selected from among the largest trees in the stand. Approximately 4 of these trees per acre may be felled for down woody debris. The proposed regeneration harvest is expected to degrade the suitability of the roosting and resting habitat; it is possible that eagles could still utilize the reserve trees for roosting or resting.

Unit 7-1, which totals approximately 51 acres, contains suitable bald eagle roosting and resting habitat in the form of a few scattered large residual old-growth or large second growth trees which are unevenly distributed throughout the unit. The unit is proposed for commercial thinning and density management. It is expected that most of the larger trees within the stand would be reserved. The proposed thinning would be expected to degrade the suitability of the roosting and resting habitat although after treatment the stand would still be expected to function as suitable habitat based on the fact that most of the largest trees in the stand would be reserved.

The potential dates of operation for the proposed project are such that activities may occur which would generate noise above the ambient level during the eagle breeding season (January 1 to August 31). Three units (9-1, 7-1 and 29-1) may be within 0.25 miles of suitable eagle habitat or within a 0.5 mile line-of-sight distance. None of this suitable habitat is currently known to be used by nesting eagles however occasional dispersed eagle usage (roosting, resting) may occur throughout the area where suitable habitat is present, most probably occur during the winter months.

It has been determined that Alternative 2 *MAY AFFECT, and is LIKELY TO ADVERSELY AFFECT* the bald eagle. This is primarily based upon the fact that the alternative includes 14 acres of regeneration harvest and 51 acres of commercial thinning or density management within marginally suitable roosting and resting habitat, and an increased potential for disturbance during the breeding season.

### **Survey and Manage Wildlife Species (S&M)**

#### **Red Tree Vole**

Although the red tree vole is generally associated with much larger and older Douglas-fir trees than those found in the vicinity of the proposed action, the project area currently contains potential habitat for the red tree vole.

All of the proposed timber sale units have been surveyed to protocol for red tree voles. *Survey Protocol for the Red Tree Vole* (Version 2.0) was followed for all surveys. These surveys resulted in no red tree voles or red tree vole nests being located.

There would be potential long-term benefits to red tree vole habitat resulting from the effects of

thinning within eight units on approximately 288 acres. This is based upon the fact that the treatment is expected to maintain a canopy closure of approximately 60% or greater and trees generally favored for retention would be the largest within the stand. The reserve trees are expected to respond to the thinning with an accelerated growth rate and increased crown development within a few years after the harvest. This would result in a higher quality of vole habitat within these units sooner than would be expected to develop without treatment. There are no expected short-term positive or negative impacts to the red tree vole resulting from the proposed thinning. This is based upon the fact that the entire action area has been surveyed and found to be unoccupied.

The regeneration harvest within six units would remove approximately 246 acres of potential habitat for the red tree vole. This habitat is generally marginal in quality and has been surveyed and found to be unoccupied by red tree voles.

### **S&M Mollusks**

Pre-project Survey and Manage mollusk surveys have been completed and resulted in the identification of one Survey and Manage mollusk species at approximately 12 sites. This species is the Oregon megomphix (*Megomphix hemphilli*), a Survey and Manage category 1A species - (survey prior to activities and manage all known sites). According to the *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (USDA and USDI, January 2001), management of all known sites is required.

Note: 14 papillose tail-dropper “known sites” were also located in or near the proposed treatment units during surveys however, as per the *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (USDA and USDI, January 2001) requirements to manage these sites no longer apply.

As a result of the *Megomphix* discoveries and to manage the known sites in a manner as to provide protection of the physical integrity of the site to maintain its population and to provide for maintenance and enhancement of the species at known sites, “Habitat Areas” would be established in accordance with *Management Recommendations for Terrestrial Mollusk Species, Megomphix hemphilli, the Oregon Megomphix v.2.0*, November 1999.

There are several additional project design features which help reduce the potential for short and longer term adverse impacts to S&M mollusks and/or their habitats throughout the general project areas. These additional design features include but are not limited to reserving all hardwoods within the treated Riparian Reserves, incorporating red alder and/or bigleaf maple into reforestation plantings, protecting and reserving existing CWD, minimizing disturbance to the existing organic duff layer by designating skid trails and minimizing the use of fire, maintaining a canopy closure of at least 60% within the thinning units and limiting operations within Riparian Reserves.

Even though measures are incorporated into the proposed action to minimize soil disturbance, it would not be totally eliminated. Within thinning units this usually results in red alder naturally seeding into areas with disturbed soil if a seed source is available; the proposed action is expected to result in an increased amount of alder growing within the treatment units which would be expected to result in some benefit to the quality of future mollusk habitat.

### **Other Special Status Species:**

Alternative 2 would not result in the loss of population viability for any Special Status Species that may occur in the project area. It would not result in the need to elevate their status to any higher level of concern including the need to list under the ESA.

### **Amphibians and Reptiles:**

#### **Red-legged Frog - (BT)**

Suitable red-legged frog habitat is located within and/or near the proposed project areas. Some riparian areas adjacent to the proposed project area that contain permanent water and could function as red-legged frog breeding areas and the well-shaded uplands provide good habitat for non-breeding and dispersing frogs. Red-legged frogs have been observed in or near some of the proposed treatment units.

In general, the "no cut" riparian buffers would provide adequate protection to the potential red-legged frog breeding habitat. The yarding corridors needing to be created through the riparian area within unit 27-1 would not be expected to appreciably reduce the quality of the breeding habitat especially given the fact that all trees needing to be cut within this buffer would be retained on site as CWD, and it would be expected that nearly full shade within the riparian area would rapidly recover as the retained and/or planted trees and brush species take advantage of the created openings. Reducing the canopy cover within the portions of the units proposed for timber harvest would have an adverse impact upon some of the cool, moist micro-habitats found on the upland forest floor. This adverse impact would be greater and longer lasting in those portions of the action area being treated with a regeneration harvest (approximately 245 acres) than in those areas receiving a lighter thinning treatment. Based upon the limited nature of the project, and the fact that the areas proposed for timber harvest are generally in proximity to areas not proposed for treatment, the Plentywater Creek project would not be expected to result in the loss of population viability for red-legged frogs within the area. It would not result in the need to elevate their status to any higher level of concern including the need to list under the ESA.

#### **Columbia Torrent Salamander - (BS)**

The Columbia torrent salamander is directly associated with the splash zone of permanently flowing streams and seeps. Suitable habitat is located within the Riparian Reserves located within and adjacent to the proposed units.

In general, the "no cut" riparian buffers would provide adequate protection to any Columbia torrent salamander habitat in the area. The yarding corridors needing to be created through the riparian area within unit 27-1 would not be expected to appreciably reduce the quality of the habitat within this area especially given the fact that full suspension would be required across Plentywater Creek, all trees needing to be cut within this buffer would be retained on site as CWD, and it would be expected that nearly full shade within the riparian area would rapidly recover as the retained and/or planted trees and brush species take advantage of the created openings.

#### **Cope's Giant Salamander - (BT)**

In general, the "no cut" riparian buffers would provide adequate protection to any Cope's giant salamander habitat which may be in the area. The yarding corridors needing to be created through the riparian area within unit 27-1 would not be expected to appreciably reduce the quality of the habitat within this area especially given the fact that all trees needing to be cut within this buffer would be retained on site as CWD, and it would be expected that nearly full shade within the riparian area would rapidly recover as the retained and/or planted trees and brush species take advantage of the created openings.

#### **Western Pond Turtle - (BS)**

In general, with the preferred habitat for the western pond turtle being associated with more open wetlands or aquatic habitats in larger stream systems than those present in the vicinity of the Plentywater Creek project, it is possible although very unlikely that the species is currently present in the project area. The project would be expected to have a negligible impact upon the western pond turtle or its habitat.

#### **Birds:**

##### **Northern Goshawk - (BS)**

The proposed action is expected to have no, or a negligible short-term impact upon goshawk habitat based upon the maintenance of the "no-cut buffers" within the Riparian Reserves, the light nature of the proposed thinning prescription, the dispersed nature of the regeneration harvests and number of reserve trees within the regeneration unit. Thinning could result in long-term benefits to goshawk habitat by maintaining or increasing the growth rates of reserve trees thus aiding the development of some late-seral stage habitat features; these benefits would be expected to be longer lived within the Riparian Reserve land allocation than within the Matrix given the long-term objectives of the land allocations. Overall, the impacts upon goshawk habitat associated with the proposed project are expected to be negligible.

#### **Mammals:**

##### **Bats**

There are no known bat roosting or hibernaculum sites within the project area.

Bats are known to forage near riparian areas, open areas, and along forest edges. The Plentywater

Creek project would be expected to immediately improve the quality of bat foraging habitat within the regeneration and thinning units by opening up the canopy and creating fragmented openings in an otherwise closed canopy. The project's design features for CWD, snag and green tree protection and retention within the harvest units should provide adequate structure for roosting or resting bats and greatly reduce any short- and/or long-term adverse impacts to bats which may result from the proposed project. Within the units proposed for thinning, there is potential for long-term benefits to these bats as a result of the proposed action based upon the fact that it would favor the development of some older forest characteristics favored by these species.

### **Other Species of Concern**

#### **Roosevelt Elk and Black-tailed Deer**

The project could temporarily displace individual deer and elk as they react to an increased human presence within the area. This would not impact the health of the population based upon the limited length of the period of disturbance and the fact that adequate additional suitable habitat is present within the vicinity of the proposed action.

The project would result in an interspersed of foraging areas and cover and overall, it would be expected to result in an improvement in the habitat quality available for elk and deer. The regeneration harvests would generally be expected to create up to approximately 246 acres of high quality foraging/browsing habitat for elk and deer given the size and configuration of the units, the proximity of treated units to areas of cover, the fact that a number of the units are behind locked gates, the proposal to obliterate many of the roads accessing the units at the completion of the harvest operations, the visual buffer within unit 21-2, and the numbers of wildlife trees being retained within the treatment units. Within the thinning treatment units, the vigor of the herb and shrub understory layers should be increased thereby also improving the quality of available browse and/or forage.

Although the proposed treatments could have a slight, adverse short-term impact upon cover for big game in portions of the thinned units, other suitable thermal and/or escape cover exists within the general area including within Riparian Reserves adjacent to the project units. Areas which are thinned would continue to function, in some regard as cover for big game (escape and/or thermal cover); forested stands should still serve to moderate temperature and wind extremes as well as serve as a visual buffer. The project would not be expected to result in a short-term reduction of available cover to the point where it would become a limiting factor, adversely impacting the population health of big game species. Thermal cover is probably less important or limiting within the Coast Range of northern Oregon than in other portions of these species' range, due to both the mild winters and summers within the region.

## **ALTERNATIVE 3 (The Soil and Water Alternative)**



**Northern Spotted Owl - Federally Threatened (FT)**

The project area is not located in or near spotted owl designated critical habitat therefore, Alternative 3 would be of “*NO EFFECT*” upon spotted owl designated critical habitat.

As with Alternative 2, Alternative 3 would result in the approximately 85 acres of unsurveyed, suitable spotted owl habitat potentially being impacted; approximately 56 acres are proposed for thinning and 30 acres are proposed for regeneration harvest. Of the approximate 390 acres of dispersal habitat potentially impacted by Alternative 3, approximately 174 acres are proposed for thinning and 215 acres are proposed for regeneration harvest. Approximately 26 acres of thinning within Riparian Reserves would occur under Alternative 3.

Under this alternative, the positive and negative impacts associated with timber harvest upon the northern spotted owl would generally be reduced proportionately from the impacts discussed for Alternative 2 to reflect the reduction in dispersal habitat acres proposed for treatment under Alternative 3. Impacts to suitable habitat are the same under alternative 3 as identified for Alternative 2.

Alternative 3 *MAY AFFECT* and is *LIKELY TO ADVERSELY AFFECT* the spotted owl based upon the fact that there would be an increased potential for disturbance of unsurveyed suitable habitat during the critical and non-critical breeding periods; approximately 390 acres of dispersal habitat would be impacted (approximately 174 acres would be degraded through commercial thinning or density management and approximately 215 acres would be removed through regeneration harvest); and 85 acres of marginally suitable, unsurveyed habitat would be impacted (approximately 56 acres would be degraded through commercial thinning or density management and approximately 30 acres would be removed through the proposed regeneration harvest).

**Marbled Murrelet - (FT)**

The project area is not located in or near murrelet designated critical habitat therefore Alternative 3 would have *NO EFFECT* upon marbled murrelet designated critical habitat.

The potential impacts to the marbled murrelet would basically be the same under Alternative 3 as were discussed under Alternative 2. This is based upon the fact that the three proposed treatment units (7-1, 9-1 and 27-1) that contain or are in proximity to potentially suitable murrelet nest trees would receive the same treatment as proposed under Alternative 2.

Alternative 3 *MAY AFFECT* and is *LIKELY TO ADVERSELY AFFECT* the marbled murrelet based upon the fact that there would be an increased potential for disturbance of unsurveyed suitable habitat during the critical and non-critical breeding periods; and there would be potential to degrade or remove the suitable habitat located within or near three treatment units (one 13-acre regeneration unit and two commercial thinning and density management units totaling approximately 110 acres).

**Bald Eagle - (FT)**

The potential impacts to the bald eagle would basically be the same under Alternative 3 as were discussed under Alternative 2. This is based upon the fact that the two proposed treatment units (7-1, 9-1) that contain potentially suitable eagle roosting and resting habitat, and the one additional unit (29-1) that may be within 0.25 miles, or within a 0.5 mile line-of-sight distance, of suitable eagle habitat would receive the same treatment as Alternative 2.

It has been determined that Alternative 3 *MAY AFFECT, and is LIKELY TO ADVERSELY AFFECT* the bald eagle. This is primarily based upon the fact that the alternative includes 14 acres of regeneration harvest and 51 acres of commercial thinning and density management within marginally suitable roosting and resting habitat, and an increased potential for disturbance during the breeding season.

#### **Survey and Manage Wildlife Species, Special Status Species or Other Species of Concern**

Under this alternative, the positive and negative impacts associated with timber harvest upon Survey and Manage Wildlife Species, Special Status Species or Other Species of Concern would generally be reduced proportionately from the impacts discussed for Alternative 2 to reflect the reduction in treatment under alternative 3.

**ALTERNATIVE 4 (Rural Interface Alternative)** This alternative eliminates units 15-1, 17-1, 21-2, and 21-3 which total approximately 105 acres. Units which would be treated range from those in Alternative 2 minus the four units, to those in Alternative 3 minus the same four units. This results in the acres being proposed for thinning under Alternative 4 being displayed as a range based upon the fact that there are differences in thinning acres between Alternative 2 and 3; Under Alternative 4 the regeneration acres are not represented as a range because there are no differences between the acres proposed for regeneration harvest in Alternatives 2 and 3.

#### **Northern Spotted Owl - Federally Threatened (FT)**

The project area is not located in or near spotted owl designated critical habitat therefore, Alternative 4 would be of “*NO EFFECT*” upon spotted owl designated critical habitat.

Alternative 4 would result in the approximately 69 acres of unsurveyed suitable spotted owl habitat potentially being impacted; approximately 56 acres are proposed for thinning and 14 acres are proposed for regeneration harvest. Under Alternative 4, unit 21-3 which is approximately 16 acres in size and has been determined to be suitable spotted owl habitat, would not receive a regeneration harvest treatment as in the other two action alternatives.

Under Alternative 4, the acres of dispersal habitat impacted potentially range from those identified in Alternative 2 minus the approximately 105 acres in units 15-1, 17-1 and 21-2 to those identified in Alternative 3 minus the same 105 acres. This leaves an upper limit to the range of approximately 343 acres of dispersal habitat that would be potentially impacted (approximately 192 acres would

be degraded through commercial thinning or density management and approximately 151 acres would be removed through regeneration harvest) and a lower limit to the range of approximately 285 acres of dispersal habitat potentially impacted by Alternative 4 (approximately 134 acres are proposed for thinning and 151 acres are proposed for regeneration harvest).

Under this alternative, the positive and negative impacts associated with timber harvest upon the northern spotted owl would generally be reduced proportionately from the impacts discussed for Alternative 2 to reflect the reduction in suitable and dispersal habitat acres proposed for treatment under alternative 4. It would be the least adverse impact upon the spotted owl out of the three action alternatives analyzed.

Alternative 4 *MAY AFFECT* and is *LIKELY TO ADVERSELY AFFECT* the spotted owl based upon the fact that there would be an increased potential for disturbance of unsurveyed suitable habitat during the critical and non-critical breeding periods; between approximately 285 and 343 acres of dispersal habitat would be impacted (between approximately 134 and 192 acres would be degraded through commercial thinning or density management and approximately 151 acres would be removed through regeneration harvest); and 69 acres of marginally suitable, unsurveyed habitat would be impacted (approximately 56 acres would be degraded through commercial thinning or density management and approximately 14 acres would be removed through the proposed regeneration harvest).

#### **Marbled Murrelet - (FT)**

The project area is not located in or near murrelet designated critical habitat therefore Alternative 4 would have *NO EFFECT* upon marbled murrelet designated critical habitat.

The potential impacts to the marbled murrelet would basically be the same under Alternative 4 as were discussed under Alternative 2 and 3. This is based upon the fact that the three proposed treatment units (7-1, 9-1 and 27-1) that contain or are in proximity to potentially suitable murrelet nest trees would receive the same treatment under all three of the action alternatives.

Alternative 4 *MAY AFFECT* and is *LIKELY TO ADVERSELY AFFECT* the marbled murrelet based upon the fact that there would be an increased potential for disturbance of unsurveyed suitable habitat during the critical and non-critical breeding periods; and there would be potential to degrade or remove the suitable habitat located within or near three treatment units (one 13-acre regeneration unit and two commercial thinning or density management units totaling approximately 110 acres).

#### **Bald Eagle - (FT)**

The potential impacts to the bald eagle would basically be the same under Alternative 4 as were discussed under Alternative 2 and 3. This is based upon the fact that the two proposed treatment units (7-1, 9-1) that contain potentially suitable eagle roosting and resting habitat, and the one additional unit (29-1) that may be within 0.25 miles, or within a 0.5 mile line-of-sight distance, of suitable eagle habitat would receive the same treatment as under the other two actions alternatives.

It has been determined that Alternative 4 *MAY AFFECT, and is LIKELY TO ADVERSELY AFFECT* the bald eagle. This is primarily based upon the fact that the alternative includes 14 acres of regeneration harvest and 51 acres of commercial thinning or density mangement within marginally suitable roosting and resting habitat, and an increased potential for disturbance during the breeding season.

**Survey and Manage Wildlife Species, Special Status Species or Other Species of Concern**

Under this alternative, the positive and negative impacts associated with timber harvest upon Survey and Manage Wildlife Species, Special Status Species or Other Species of Concern would generally be reduced proportionately from the impacts discussed for Alternative 2 to reflect the reduction in treatment under alternative 4.

**Table 3. Relative Amounts of T&E Species Habitats Potentially Impacted by the Various Alternatives of the Plentywater Creek Timber Sale Projects**

Alternative	Acres of spotted owl habitat				Acres of treatment units containing potential marbled murrelet nesting platforms		Acres of treatment units containing potential bald eagle roosting and resting habitat	
	suitable habitat		dispersal habitat					
	thinned	regen. harvest	thinned	regen. harvest	thinned	regen. harvest	thinned	regen. harvest
1	0	0	0	0	0	0	0	0
2	56	30	232	216	110	13	51	14
3	56	30	174	215	110	13	51	14
4	56	14	134 to 193	151	110	13	51	14

**The Other “Restoration” Projects** - including the wildlife habitat enhancement projects; fish habitat enhancement projects; road stabilization project; and the riparian rehabilitation of an old abandoned campground.

**Wildlife Habitat Enhancement Locations:** Five treatment units totaling approximately 80 acres - Three treatment units within T.3N., R.3W., Sec. 29 which are approximately 19, 5 and 3 acres in size; One treatment unit within T.3N., R.3W., Sec. 33 which is approximately 40 acres in size; and one treatment unit within T.2N., R.3W., Sec. 3 which is approximately 12 acres in size.

Approximately 25% of the areas proposed for wildlife habitat enhancement (the 12-acre unit in section 3 and a total of about 10 acres within the 3 units within section 29) are located within those

areas identified within the 15% Analysis Documentation (as updated 11/15/99) which was completed to assure conformance with the 15 percent Retention Standard and Guideline. All of the Wildlife Habitat Enhancement projects, including the portions within areas identified as helping to meet the 15% Retention Standard and Guideline, have been designed to promote the development of late-seral habitat or to enhance the current quality of late-seral habitat by promoting the development of certain important habitat features.

**Fish Habitat Enhancement Locations:** Up to a total of approximately 2000 feet of stream located in three segments within T.3N., R.3W., Sec. 21, 29. Logs would be obtained by felling trees from an area approximately 1.5 acres in size which was formerly a part of the proposed timber sale (unit 3-1) located at T.2N., R.3W., section 3. This area is currently considered to be spotted owl dispersal habitat.

There is no suitable habitat for the spotted owl, marbled murrelet or bald eagle within or near (within 0.25 miles) the fish habitat enhancement projects and there are no known occupied spotted owl, marbled murrelet nor bald eagle sites within the vicinity of any of the proposed restoration project areas.

**Floodplain Restoration / Campground Rehabilitation Location:** T.3N., R.3W., Sec. 21

There is no suitable habitat for the spotted owl, marbled murrelet or bald eagle within or near (within 0.25 miles) the project area and there are no known occupied spotted owl, marbled murrelet nor bald eagle sites within the vicinity of any of the proposed restoration project areas.

**Road Stabilization Location:** T.3N., R.3W., Sec. 33

There is no suitable habitat for the spotted owl, marbled murrelet or bald eagle within or near (within 0.25 miles) the fish habitat enhancement projects, the road stabilization project nor the riparian rehabilitation of an old abandoned campground. There are no known occupied spotted owl, marbled murrelet nor bald eagle sites within the vicinity of any of the proposed restoration project areas.

**ENVIRONMENTAL CONSEQUENCES** resulting from the other restoration projects - (wildlife habitat enhancement projects; fish habitat enhancement projects; road stabilization project; and the Floodplain restoration / rehabilitation of an old abandoned campground).

## **ALTERNATIVE 1 - (The “No Action” Alternative)**

Under this alternative the other restoration projects - (wildlife habitat enhancement projects; fish habitat enhancement projects; road stabilization project; and the Floodplain restoration / rehabilitation of an old abandoned campground) would not be implemented. Under the “No Action” Alternative, the identified beneficial and adverse impacts of the action alternative upon wildlife and wildlife habitat would not occur at the identified sites at this time.

Selection of the “No Action” Alternative would be of *NO EFFECT* upon the marbled murrelet, spotted owl, bald eagle and all other species listed under the ESA. No impacts to S&M wildlife species or any known sites would occur. In addition, the population viability of no Special Status Species or species of concern would be expected to be adversely impacted resulting in the elevation of their status to any higher level of concern including the need to list under the ESA.

## ALTERNATIVE 2

**Spotted Owl and Marbled Murrelet Designated Critical Habitat** - Since none of the proposed restoration projects are located within or near designated critical habitat for the spotted owl or the marbled murrelet, all of the projects would be of *NO EFFECT* upon designated critical habitat for the spotted owl or the marbled murrelet.

In accordance with regulations pursuant to Section 7 of the Endangered Species Act of 1973, as amended, formal and/or informal consultation with the USFWS concerning the potential impacts of the Plentywater Creek restoration projects upon the spotted owl, marbled murrelet and bald eagle would be completed where appropriate. This may involve the preparation of project-specific Biological Assessment and/or inclusion of some of the projects within the annual programmatic habitat modification or disturbance-only consultation process.

### **Wildlife Habitat Enhancement Project**

#### **Wildlife Species listed or proposed under the Endangered Species Act:**

Some of the areas identified for treatment under the wildlife habitat enhancement may contain and/or be within 0.25 miles of suitable habitat for the spotted owl, marbled murrelet and/or bald eagle. Portions of the 19-acre unit within T.3N., R.3W., section 29 are considered to be marginally suitable for the spotted owl and bald eagle although it has been determined to not be suitable marbled murrelet habitat based upon the lack of suitable nesting platforms. All of the five units proposed for treatment are currently considered to be dispersal habitat for the spotted owl. There are no known occupied spotted owl, marbled murrelet nor bald eagle sites within the vicinity of any of the proposed wildlife habitat enhancement project areas.

#### **Northern Spotted Owl - (FT)**

Based upon the potential for disturbance resulting from the fact that chainsaws could be utilized after August 6, (within the non-critical owl nesting season) as well as the potential short term impacts and long term potential beneficial impacts to spotted owl suitable habitat, the project has been determined to *MAY AFFECT but NOT LIKELY TO ADVERSELY EFFECT* the spotted owl. Beneficial impacts include increasing the abundance of major constituent elements of spotted owl habitat in an area identified as generally lacking those elements - trees suitable for owl and prey base nesting, large conifers within mixed hardwood/conifer stands, and CWD (Coarse Woody Debris). The wildlife habitat enhancement project could likely afford (1) future nest trees for the owl (2) denning and foraging sites for prey species and (3) CWD which could be utilized by prey

species and other special status species.

#### **Marbled Murrelet - (FT)**

The project would occur within 0.25 miles of suitable murrelet habitat which has not been surveyed to protocol. Because of the potential for the use of chainsaws, as well as climbing into the canopy during the non-critical portion of the breeding season (daily time restrictions would be utilized for work occurring on or prior to September 15), the wildlife enhancement project has been determined to be a *MAY AFFECT but NOT LIKELY TO ADVERSELY AFFECT* the murrelet based upon the potential for disturbance. This analysis also considers the potential short term adverse impacts and any long term potential beneficial impacts to potential murrelet habitat.

#### **Bald Eagle - (FT)**

Although the nearest known eagle nest is more than 6 miles from the proposed project areas, some of the areas identified for treatment under the wildlife habitat enhancement may be within 0.25 miles of suitable roosting and resting habitat for the bald eagle, and portions of the 19-acre unit within T.3N., R.3W., section 29 are considered to be marginally suitable roosting and resting habitat for the bald eagle. The creation of snags within this unit would be expected to improve the quality of eagle habitat within this area though providing an increased opportunity for roosting sites.

Based upon the potential for noise disturbance between August 6 and March 1 to the suitable habitat within the 19-acre unit within section 29, and the potential for disturbance during all portions of the year to any suitable habitat within 0.25 miles (or 0.5 miles line-of-sight distance) from any of the other treatment units, the project *MAY EFFECT* although it is *NOT LIKELY TO ADVERSELY EFFECT* the bald eagle.

### **Survey and Manage Wildlife Species (S&M)**

#### **Red Tree Vole**

Although the red tree vole is generally associated with much larger and older Douglas-fir trees than those found in the vicinity of the proposed wildlife habitat enhancement projects, some portions of the project areas currently contain potential habitat for the red tree vole. In general this habitat is of a marginal quality based upon the stand age and average diameter of the trees.

The various design features of the individual wildlife enhancement treatment units and the nature of the habitats potentially impacted were evaluated and it was determined that only the 19-acre unit in section 29 required pre-project red tree vole surveys. This survey was conducted to *Survey Protocol for the Red Tree Vole* (Version 2.0) with no red tree voles or red tree vole nests being located.

The wildlife habitat enhancement treatments within the 3 and 5 acre units in section 29 would involve basal girdling one clump of 2 - 5 Douglas-firs per acre which do not contain nests and are

not adjacent to any trees which contain nests. Based upon the fact that no trees would be felled, such a small percentage of available Douglas-firs within the stands would be treated and these trees would not contain nests, the proposal would not impact the suitability of the treated stands for use by red tree voles. No surveys are required for the wildlife habitat enhancement treatment units within section 29.

The wildlife habitat enhancement treatments within the 40-acre unit in section 33, and 12-acre unit within section 3 involve small clumps of overstory alders being felled or girdled to release existing understory conifer regeneration and/or overstory conifers. No trees with an obvious nest or trees adjacent to any tree with an obvious nest would be selected for treatment. Based upon these design features and the nature of the habitat to be treated, the wildlife enhancement treatments proposed within these units have been determined to not impact the suitability of the treated stands for use by Red tree voles. No surveys are required for the wildlife habitat enhancement treatment units within sections 33 or 3.

### **Mollusks**

The various design features of the individual treatment units, as well as the nature of the habitat features to be impacted have been evaluated and it has been determined that the wildlife habitat enhancement treatments would not impact the suitability of the treated stands for use by S&M mollusks. No impact to these species is expected as a result of the proposed projects. No S&M mollusk surveys will be conducted in these treatment units.

### **Other Special Status Species:**

The population viability of no Special Status Species would be expected to be adversely impacted resulting in the elevation of their status to any higher level of concern including the need to list under the ESA.

Special Status Species which utilize or depend upon snags and/or other CWD such as the clouded salamander and pileated woodpecker, both Bureau Tracking species, would benefit from the proposal.

### **Fish Habitat Enhancement Project**

#### **Wildlife Species listed or proposed under the Endangered Species Act:**

There is no suitable habitat for the spotted owl, marbled murrelet or bald eagle within or near the stream segments proposed for habitat enhancement treatment project area, the project is of *No Effect* upon the marbled murrelet or bald eagle. The project may involve some trees for in-stream placement being acquired from an area identified within the timber sale portion of the Plentywater Creek Project, potentially from unit 3-1, and/or the riparian areas adjacent to the stream projects. Obtaining the logs from an area which was formerly a part of the timber sale (unit 3-1) would involve the removal of up to 1.5 acres of spotted owl dispersal habitat. The riparian areas along all the stream reaches proposed for fish habitat enhancement have been determined to be dispersal habitat for the spotted owl. These stands would be expected to continue functioning as dispersal



habitat post-project.

The modification of the dispersal habitat within the Riparian Reserve (through potentially falling some trees to be used for in-stream structure) and/or the removal of up 1.5 acres of dispersal habitat *May Affect but is Not Likely to Adversely Affect* the spotted owl.

#### **Survey and Manage Wildlife Species (S&M)**

Surveys for the red tree vole and S&M mollusks have been completed along the riparian segments which would be impacted by the Fish Habitat Enhancement Project as well as in the 1.5 acre forest patch which is identified as a source for logs. No known sites were identified.

#### **Other Special Status Species:**

Although none of these species have been identified within the project area, there is some potential for short-term adverse impacts to the western pond turtle, Columbia torrent salamander, Cope's giant salamander and red-legged frog and/or their habitats as a result of the proposed action. These impacts however are not expected to result in the need to elevate their status to any higher level of concern including the need to list under the ESA. In the longer-term, the project is expected to result in a greater diversity of aquatic habitats and a more properly functioning aquatic and riparian system. This would be expected to benefit many wildlife species including the western pond turtle, Columbia torrent salamander, Cope's giant salamander and red-legged frog.

#### **Floodplain Restoration / Campground Rehabilitation Project**

##### **Wildlife Species listed or proposed under the Endangered Species Act:**

Since there is no suitable habitat for the spotted owl, marbled murrelet or bald eagle within or near (within 0.25 miles) the project area, and the project would not involve any appreciable impacts to spotted owl dispersal habitat, the project would be of *No Effect* upon the spotted owl, marbled murrelet or bald eagle. This includes the impacts associated with the potential for disturbance as well as habitat modification.

#### **Survey and Manage Wildlife Species (S&M)**

Surveys for red tree vole and S&M mollusks have been completed along the riparian segments which would be impacted by the Floodplain Restoration / Campground Rehabilitation Project. No known sites were identified.

#### **Other Special Status Species:**

Although none of these species have been identified within the project area, there is some potential for short-term adverse impacts to the western pond turtle, Columbia torrent salamander, Cope's giant salamander and red-legged frog and/or their habitats as a result of the proposed action. These impacts however are not expected to result in the need to elevate their status to any higher level of concern including the need to list under the ESA. In the longer-term, the project is expected to result in a more properly functioning aquatic and riparian system. This would be expected to

benefit many species including the western pond turtle, Columbia torrent salamander, Cope's giant salamander and red-legged frog.

### **Road Stabilization Project**

#### **Wildlife Species listed or proposed under the Endangered Species Act:**

Since there is no suitable habitat for the spotted owl, marbled murrelet or bald eagle within or near (within 0.25 miles) the project area, the project would be of *No Effect* upon the spotted owl, marbled murrelet or bald eagle.

#### **Survey and Manage Wildlife Species (S&M)**

The impacted area has been determined to be non-habitat for the red tree vole and S&M mollusks. Surveys for these species are not required and no impacts to the species or any known sites would be anticipated.

#### **Other Special Status Species:**

No species identified under the Bureau's 6840 manual Special Status Species policy are expected to be adversely impacted by the Road Stabilization Project. The population viability of no Special Status Species would be expected to be adversely impacted resulting in the elevation of their status to any higher level of concern including the need to list under the ESA.

## CUMULATIVE EFFECTS

“Cumulative Effects” are the impacts on the environment which result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant actions taking place over a period of time (CEQ 1508.7). Cumulative effects analysis provides greater insight into understanding the current environmental factors and the likely trends which might affect the environment.

Relative to wildlife resources, the only issue identified within the *Dairy-McKay Watershed Analysis* (1999) with a likelihood for cumulative effects is related to factors affecting the distribution of sensitive species. There are adverse cumulative effects expected to result from the proposed action alternatives which are associated with the modification of habitat for the species of concern which utilize late-seral habitat. These adverse impacts are associated with both the removal and degradation of suitable habitat for the spotted owl, marbled murrelet and bald eagle in a watershed where late-seral habitat is generally lacking. The Watershed Analysis states (pg. 91), “Since habitat loss for species of concern is an important factor in this watershed, it is of increased importance that remaining habitats on federal lands be maintained.” Potential mitigation measures to reduce these adverse cumulative impacts have been included within Chapter 3.8.2 - Additional Recommendations Not Part of the Alternatives (Wildlife Resources).

The federal lands in the Dairy-McKay watershed are distributed in a scattered, checkerboard fashion and do not lend themselves to the management of larger blocks of late-seral habitat, including suitable habitat for wide-ranging species such as the northern spotted owl. Based upon this ownership pattern, late-seral stands within the landscape are expected to function more as an important element of general connectivity, dispersal, and refugia for late-successional associated species with smaller home ranges, or for those species such as bats or pileated woodpeckers which may utilize other habitat types but are dependent upon some specific late-successional habitat features.

Aside from one 280-acre parcel of LSR (Late-Successional Reserve) referred to as “Big Canyon”, federal lands in the Dairy-McKay watershed fall into the Matrix or Riparian Reserve land allocations as identified within the NWFP and RMP. Roughly 50% of the federal lands within the Dairy Creek watershed are allocated as Riparian Reserves and are being managed for the attainment of the Aquatic Conservation Strategy objectives. Matrix lands (about 45% of the federal land) are being managed for, although not limited to, enhancing the future timber-producing capability of the area; managing timber stands to reduce the risk of loss from disease; providing for the maintenance of ecologically valuable structural components such as down logs, snags and large trees; providing early-successional habitat; and helping to meet the planned timber sale volume for the Tillamook Resource Area PSQ (Probable Sale Quantity). Lands within the Matrix land allocation are generally intended to be managed with a high emphasis on timber production with rotation lengths that would generally preclude the development and/or maintenance of late-seral

habitat.

Currently, approximately 12% of the BLM land within the watershed (740 acres) is considered to be potentially suitable spotted owl and marbled murrelet habitat. This is based upon a GIS analysis that identified forested stands which contain a component which is greater than or equal to 80 years old. A site specific evaluation of these stands would be necessary in order to confirm the habitat suitability. It is very possible that an appreciable portion of these acres do not contain the necessary nesting platforms to make them potentially suitable as murrelet nesting habitat.

In addition to the 740 acres of potentially suitable spotted owl and marbled murrelet habitat identified above and based upon a site-specific evaluation, Plentywater Creek units 7-1, 9-1 and 21-3 have been determined to be suitable habitat for the spotted owl, although the habitat quality is of a marginal nature. While these stands, totaling up to approximately 80 acres, may be less than 80-years-old, they are generally in proximity to and/or exhibit habitat features such as scattered individual or small groups of larger trees, and/or a multistoried structure which are believed to make the stand, or at least portions of the stand, suitable as foraging and roosting habitat for the spotted owl. (The 5 acres of unit 27-1 which has also been determined to be suitable owl and murrelet habitat is included in the 740 acres GIS total acreage based on the timber typing which reflects a 100-year-old component.) The fragmented nature of the surrounding landscape and the marginal habitat quality of the affected stands are believed to limit their current value as owl nesting habitat. Three proposed treatment units (7-1, 9-1 and 27-1) contain or are in proximity to individual trees and/or small groups of trees which are potentially suitable as murrelet nest trees based upon the presence of suitable nesting platforms. All three of these units are proposed for treatment under all of the action alternatives. Two of the proposed treatment units (units 9-1, 7-1) have been determined to contain suitable habitat for bald eagles, both of the units are proposed for treatment under all three action alternatives.

Of the approximately 85 acres of habitat which is suitable for at least one of the identified federally listed species and potentially impacted by Alternative 2 and 3, approximately 56 acres are proposed for thinning and 30 acres are proposed for regeneration harvest. Alternative 4 would treat approximately 69 acres of suitable T&E habitat, 56 acres would be thinned while 14 acres would be regeneration harvested. The 16-acre unit 21-3 is not treated under alternative 4. Alternative 1, the no action alternative, would impact no acres of suitable habitat.

In addition to the Plentywater Creek project, one BLM project is anticipated to take place within the Dairy-McKay Watershed during the same relative time frame. This project is the Powerline Dairy timber sale. It has the potential to generate disturbance and/or through habitat modification, impact some of the same resource values as the proposed action and therefore has been evaluated with the proposed project for cumulative impacts upon wildlife resources. The Powerline Dairy timber sale is located at T4N., R3W., section 33; it is currently planned to be sold in about FY 2002 or later. The Powerline Dairy project includes a total of approximately 72 acres of treatment within the Matrix land use allocation (approximately 50 acres of commercial thinning, and 22 acres of regeneration harvest) and approximately 16 acres of density management within the Riparian

Reserves land use allocation. The stands proposed for treatment in the Powerline Dairy timber sale are approximately 70-years-old and have been determined to be dispersal habitat for the spotted owl although not suitable for the spotted owl, marbled murrelet or bald eagle. (See also Appendix 4 - Past, Present, and Reasonably Foreseeable Future Actions)

Less information is available on habitat altering management activities to occur on non-federal lands however, the general trend on private land is one of decreasing quantities of late-seral habitat. The majority of non-federal forest land within the watershed is owned by industrial timber companies and is managed for timber production. This generally precludes the development and/or maintenance of late-seral habitat. While private lands within the northern portion of the Oregon Coast Range, including the Dairy-McKay Watershed, support some dispersal habitat for the northern spotted owl, the suitable habitat for the spotted owl, marbled murrelet and bald eagle on these lands is very limited in quantity and marginal in quality thereby not notably contributing to the viability of the species. Before the spotted owl was listed as a threatened species under the ESA, Thomas et al. estimated in *A Conservation Strategy for the Northern Spotted Owl* (USDA and USDI 1990) that most privately-owned spotted owl habitat in Oregon (mature timber which would generally include murrelet and bald eagle habitat) would be eliminated within 10 years. Continued timber harvest on private lands which is consistent with the Oregon Forest Practices Act is assumed. Within the *Recovery Plan for the Marbled Murrelet* (USDI 1997) the USFWS recognized that most of the nesting habitat on private land had been eliminated by timber harvest and that the remaining tracts of potentially suitable habitat on private lands are subject to continuing timber harvest operations. Additionally, in most areas, second-growth forests have been or are planned to be harvested before they will attain the characteristics of older forests. Because the majority of private forest land within the vicinity of the proposed action area is managed for timber production, little spotted owl, bald eagle or murrelet habitat remains on these lands other than small isolated patches. Habitat conditions on these lands are not expected to notably improve within the foreseeable future and the limited late-seral stage habitat that does remain is expected to be greatly reduced over time.

The cumulative impacts associated with the Plentywater Creek project upon the marbled murrelet are within the range analyzed for the Salem District RMP. In table 4-14 within the *Salem District Proposed Resource Management Plan / Final Environmental Impact Statement, Volume 1* (September 1994) the BLM proposed timber harvest [regeneration harvest] during the first decade within 145 acres of unoccupied, suitable marbled murrelet habitat; this analysis used a definition of suitable murrelet habitat as being stands over 120-years-old with a light to moderate overstory. Applying the definition above, the FEIS reported 28,054 acres of suitable murrelet habitat within the Salem District (FEIS pg 4-53). To date, the Tillamook and Mary's Peak Resource Area's of the Salem District have implemented (sold) a total of 44 acres of regeneration harvest within stands more than 120 years old (see project record document 115 ). *note: Since this analysis was conducted, potential marbled murrelet habitat has been redefined to include conifer-dominated stands that are 80-years-old or older and generally have trees greater than or equal to 18 inches dbh. Applying this expanded definition, there are 78,282 acres of potential or suitable murrelet habitat within the Salem District as reported within the most recent Programmatic Habitat*

*Modification Biological Assessment/Opinion prepared for FY 2001 projects within the North Coast Range Province (USDI 2000). Therefore, stands within the Salem District currently considered to be potential murrelet habitat that are between 80- and 120-years-old, as well as those proposed for treatment in the Plentywater Creek Project which are younger than 80-years-old although based upon site-specific conditions determined to be potentially suitable, were not considered in the modeling conducted for the RMP and these acres would not apply toward the 145 acres as described in the FEIS.*

The 216 acres of dispersal habitat which are proposed for regeneration harvest under Alternatives 2 and 3, and the 151 acres proposed under alternative 4 would be removed from a condition to function as dispersal habitat for about 40 years. With approximately 54% of the forest lands (all ownership) and approximately 82% of the BLM land within the watershed currently being in a condition to function as dispersal habitat, it has been determined that adequate dispersal habitat would be present post harvest under all of the action alternatives to facilitate owl dispersal - approximately 54% of the total forest lands considering all ownership, or approximately 78% of the BLM land.

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